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JULY 1, 1938

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Garden Work for Early July

THE OLD flower heads of rhododendrons and mountain laurel should be broken off.

LAWNS must be watered thoroughly in very dry weather. The best plan is to soak the ground to a depth of several inches once a week.

MIGNONETTE is not grown as often as it formerly was but is still prized for its fragrance. It is short-lived and another sowing of seeds should be made now.

ROSES need water in abundance at this season. It is best applied by permitting the water from the hose to run freely over the ground, the end of the hose resting on a board.

IRISES may be moved and divided at any time after they have bloomed, and the bearded irises do best if separated once in three or four years.

IT IS much better to divide pyrethrums this month than to wait until later in the season. They can be separated readily now and will make good plants by next Fall.

IT IS not too late to make another planting of turnips, beets, carrots, kohlrabi and lettuce, although it will be difficult to grow the lettuce unless it is shaded and kept well watered.

ANNUALS and certain shrubs and trees need to be watched for plant lice, which work quickly and multiply with an astonishing rapidity. Spraying with nicotine or a rotenone preparation will control them.

THE CUTTING of asparagus must cease. A good dressing of fertilizer may be dug into the soil around the plants now, and spraying of the tops will be required to keep them from being eaten by the asparagus beetle.

PEONIES will profit by a light application of balanced fertilizer after the flowering season. It is not necessary to depend upon bone meal or wood ashes. Peonies also like a liberal amount of water after they have bloomed, because they will soon start preparations for next season.

RED SPIDER does much damage to evergreens at this season, particularly if the weather is dry. The presence of this pest is to be suspected when juniper and spruce trees turn rusty. The simplest remedy is the constant use of the hose, a strong stream being directed against all the branches several times a week.

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HORTICULTURE

Better Gardens Make Better Homes

HORTICULTURAL NEWS-LETTER

A Famous Rosarian Is Thrice Honored

MR. THEODORE WIRTH was thrice honored at the meeting of the American Rose Society held in Hartford, Conn., Tuesday and Wednesday, June 21 and 22. First, he was given the society's medal of achievement in rose culture, this presentation being made by Dr. J. Horace McFarland of Harrisburg, Pa., president emeritus. Then he was given the Hartford city medallion by the mayor of the city, Thomas J. Spellacy. Finally, at the dinner held Tuesday evening at the Bond Hotel, the Connecticut Horticultural Society gave him a handsomely engraved silver plate. Mr. Wirth is now a resident of Minneapolis, Minn., where he long acted as superintendent of parks.

As is well known, Mr. Wirth established the first municipal rose garden in this country in 1903. This was the rose garden in Elizabeth Park, a garden which still maintains its pre-eminent position. As a result of the project which Mr. Wirth inaugurated, municipal gardens have been established in scores of cities throughout the country.

The Hartford meeting was one of exceptional interest because it was combined with the rose show of the Connecticut Horticultural Society. This show was held under very favorable conditions at the Avery Memorial Art Museum, in which building the meetings of the rose society were conducted. The members of the two organizations were given a preview of the show, after which the public was admitted. The show consisted largely of flower arrangements which were put up by 22 garden clubs, without competition.

Cultural classes were in open competition. The judges selected a specimen of Joanna Hill as the best rose in the show and gave it a place of honor in the hall. This rose was submitted by Mrs. James A. Hayes of Southport. Other awards included a special silver medal given to W. D. Brownell of Little Compton, R. I., for a display of roses originated by him. A special prize was also given to Jackson & Perkins of Newark, N. Y., and to the Hartford Park Department. The Rose Society's sweepstake award, a silver bud vase, went to Helen and Mary Chapman of Manchester for pink hybrid tea roses.

The weather was extremely hot when the ceremonies at the rose garden were carried out, but there was a large attendance, with Dr. Allen T. Kirk of Roanoke, Va., president of the American Rose Society, in charge. George H. Hollister, the present superintendent of the park, gave a description of the gardens, after which the presentation to Mr. Wirth was made. In his remarks, Dr. McFarland said, "This medal is being bestowed on Mr. Wirth for making God's greatest flower available to millions of people."

The meeting at the hall included a series of lectures on different matters pertaining to roses and rose growing. The banquet was presided over by Dr. Kirk, with Mr. Clement Mortensen of Cromwell acting as toastmaster. The speakers were Mrs. Anson Smith of Dedham, Mass., who used lantern slides to illustrate a very interesting talk on flower arrangements, and Mr. F. L. Skinner of Manitoba, Canada, whose subject was "An Outlook to Rosedom" and who had much to offer in the way of suggestions about the propagating and growing of roses, especially in northern sections.

The Men's Garden Clubs Convention

The annual convention of the National Men's Garden Clubs was held at Jackson, Mich., on June 16, 17 and 18. From the moment the gavel knocked for the opening meeting until the last farewell had been spoken the members showed an enthusiastic interest, and the tours of the surrounding territory opened their eyes to what other gardeners are doing.

Crimson Glory was among the outstanding red roses seen at Elizabeth Park.

Friday morning the business meeting was held and officers elected as follows:

President—Walter Grienter, Jackson, Mich.
First Vice-President—Hoyt Paxton, Elmhurst, Ill.
Second Vice-President—A. J. Nitzschke, Savannah, Ga.
Treasurer—Donald M. Hastings, Atlanta, Ga.
Secretary-Assistant Treasurer—George B. Gobbin, Jackson, Mich.
New Directors—Dr. E. G. C. Williams, Danville, Ill.
A. E. Koeneman, Ft. Wayne, Ind.
L. E. Tarr, Syracuse, N. Y.
Jim Wood, Cleveland, Ohio.

It was voted to hold the 1939 meeting at Elmhurst, Ill., with tours to be arranged in the surrounding territory.

On Friday evening, Mrs. Rice of Grand Rapids, Mich., gave an illustrated lecture on gardening, showing garden activities from early Spring until the last operations.

Saturday morning the company visited the Fort Dearborn museum and this was one of the high spots of the convention. There were so many plows to see, so much of everything that remotely bordered on agriculture in general, that everyone was amazed. The Greenwich Village was also visited.

The Dearborn rose gardens were next seen, the second time that they have been opened to any organization. Mr. Henry Ford and Mrs. Ford were present, stopping for a few minutes on their way to attend a wedding. Both spoke gracious words to welcome the guests. The remarkable rose garden covers an area of about ten acres, and contains so many varieties as to bewilder the professional.

The convention voted to make Mr. W. B. Lathrop, Aurora, Ill., a life member for meritorious work in connection with the organization. He devoted six years in organizing and to him is largely due the success so far attained.

A new official bulletin will hereafter be issued, a copy being mailed to the president and secretary of each club. A larger yearbook will also be issued, with appropriate articles concerning the work of the organization and authentic and timely articles of interest to everyone.

A feature of the convention was Mr. Harry O'Brien's illustrated résumé of his five years' accumulation of information for the preparation of horticultural articles. He has met a great many experts in all branches of horticulture and his remarks were of much interest.

The National Council Visits Bermuda

As the steamer carrying nearly 400 members of the National Council of Garden Club Federations drew near Bermuda, following the New York convention, there was much speculation about the masses of pink which dotted the islands and towered above the little white houses, but it was not until the steamer reached the harbor entrance of Hamilton that they were identified as oleanders. Thirty-foot masses of them—white, pink and red—they grow luxuriantly as hedges, windbreaks or single specimens, and in the century and a half since their introduction they have become one of the dominant flowers of the islands. At the dock the delegates were welcomed by the Mayor of Hamilton and Mrs. Ethel Gosling, president of the Bermuda Garden Club, and Mrs. Alfred B. Smith, past president, and chairman of the host committee. Mrs. O. W. Dynes, president of the National Council, responded graciously and was presented with a huge bouquet of gerberas.

In the afternoon there was a reception and garden party at Government House, given by Lt. Gen. Sir H. J. T. Hildyard, K.C.B., C.M.G., D.S.O., and Lady Hildyard. At the close of the reception, the visitors were divided into small groups to visit gardens. Although the lily season was past, they were still blooming in some gardens, with masses of large white petunias and many annuals.

Next morning, returning with pleasure to the horse and buggy days, the visitors were off in a phaeton, shaded by a fringed canopy and drawn by a pair of horses. A pink oleander, festooned with blue morning-glories, was a pleasant sight, as was a bush of orange lantana, locally called English sage bush. *Russelia juncea,* called English heath, hung its little red bells over stone walls, while bougainvilleas in magenta, cherry red, rose pink and orange climbed over porches. Hedges of jasmine perfumed the air. One field of blooming lilies surrounded by a pink oleander hedge, was seen; several of amaryllis and of gerberas. In the crevices of limestone cliffs the maidenhair fern grew luxuriantly. Feathery fennel grew six feet high and the floppers or life plant, *Bryophyllum pinnatum,* was everywhere.

The islands are heavily wooded with cedar and palmetto, two of the most important endemic plants. The cedar trees were loaded with berries and closely resembled the northern red cedar. The visitors were much puzzled by trees which were flaming in Autumn red and gold foliage. This is the fiddlewood, introduced nearly a century ago. It has the habit of changing color and dropping its leaves in late Spring, rather than in Autumn, and the cocolobis or seashore grape, shares this peculiarity.

Colorful hedges are seen in Bermuda—hibiscus in many colors, feathery tamarisk, oleanders, lantana, acalypha or "match-me-if-you-can," *Duranta repens* or pigeon berry, with lavender flowers and strings of orange berries resembling our bittersweet. Even the humble red geranium is utilized.

The banquet in the evening was held at the Belmont Manor. The head table was decorated with Easter lilies, white petunias and lavender passion flowers.

The speaker of the evening was Sir Stanley S. Spurling, who gave a brief history of Bermuda, and the many ties which connect it with the United States. Garden club work, he said, is one of the most important of modern times, a contribution to international peace, and the work of the National Council is well and favorably known in all countries of the world.

Thousands of Trees Being Transplanted

One of the most elaborate and unusual tree-transplanting jobs in history is being undertaken at the site of the 1939 Golden Gate International Exposition in San Francisco, Calif. More than 4,000 trees and 40,000 shrubs, ranging from two feet to 65 feet tall, are being barged to Treasure Island in San Francisco Bay. The first barge-load of trees was moved early in May under the direction of Julius L. Girod, chief of the exposition's bureau of horticulture. The first shipment included 200 tons of Irish yews, acacias and olives. A later shipment was of ten giant palm trees, each 60 feet high and weighing 40 tons. In this case, the trees were rigged upright, like masts.

The Illustration on the Cover

THE cover of this issue illustrates gardening as practiced by the Zuni Indians of Arizona. The Zuni Indians divide their gardens into small basins, usually about 15 to 24 inches across, by building up borders four inches in height. From one to six hills of vegetables are planted in each basin, the number depending upon the kind being grown.

It is dry-land farming, or perhaps one should say gardening, for the Zunis in the main grow vegetables which will mature a crop in a comparatively short time. In this way they take advantage of the Spring rainfall. When the rainy season has passed, the gardens are irrigated by filling the basins with water. Frequently the women carry the water a considerable distance in earthen jars balanced on their heads.

The Zuni farmers also know how to mulch the soil to conserve moisture. In some cases sand is hauled for the garden, especially if the soil is a heavy clay. Two or three inches of sand is placed over each hill after it is planted to conserve the moisture and keep the ground soft, thus making it easier for the young plants to reach the surface. Instead of sand, a reasonably heavy layer of manure is sometimes used. In either case the mulch covers an area of ground 12 to 15 inches in diameter around the plant.

The Making of a Rock Garden

Provision must be made to keep the little plants from being drowned, starved or otherwise abused

BOTH nurserymen and horticultural writers urge the massing of plants. Now, for a landscape-type rockery, that is, one designed for effect only, such massing is practical. But if one is considering alpines and not show plants, he must remember that alpines are not particularly sociable, but, rather, are lone wolves. In the alpine regions, and in the arctics, conditions are too difficult to support the luxuriant foliage one finds in the tropics. As soil is scarce and poor, much of the ground is bare. In a square yard there may be one or two blooming plants, a dozen sedges or grasses and that is all. Stone chips and bare rock are plainly visible. So it should be in the garden of alpines. Leave plenty of chip-covered area between plants. Planted singly, each alpine will develop into a handsome specimen; if crowded together in a "mass," this individuality is entirely lost.

Now this does not mean that you should have only one plant of a kind in your garden. Far from it. Use a dozen if space allows, but distribute them — a group of three separated by sufficient room so that each plant will develop as a specimen, then an interval, then perhaps a single plant, then a longer interval, and then two plants, and so on. Needless to say, other species can be introduced into the interval, but under no circumstances should one confine each species to an allotted area as if it were confined by a chain.

This is because in Nature there is a free intermingling of individuals of species of similar requirements. From a single plant will spring a whole community of plants, sometimes in concentric circles, but more often in a given direction, due to the scattering of seed by the prevailing wind. This fact, that migration seldom takes place equally in all directions, is the basis for a recommended uneven distribution of plants of a single species throughout the garden.

In this connection some comment should be made about the apparently very common belief that in nature alpines occur in glorious masses. Undoubtedly, much of the enthusiasm of writers who have seen alpines growing under natural conditions, is due in part to the thrill they get in first beholding an alpine area and seeing the plants of which they have read and perhaps tried vainly to grow, blooming freely and enthusiastically. In addition, this prevalent idea has been fostered by the real abundance with which certain species do occur, notably such things as the western erythroniums which occur in broad sheets.

The third factor responsible for this belief is the marked contrast between colorful alpine plants and their bleak surroundings as well as the gorgeous mass of color produced by each individual, which is customarily out of all proportion to the size of the plant itself.

The white flowers of Thlaspi alpestre give an interesting effect in the rock garden.

It should be noted that "masses" is a relative term. What constitutes a mass in one place, is in another place only a very meager display. Of the three classes of alpine plants, only the meadow species occur with any great abundance in a restricted area. The saxatile plants—that is, the rock-lovers which hug the cliffs and talus slopes, may be quoted by authorities as being "abundant throughout the Selkirk Mountains," but instead of meaning that it forms broad masses, as the gardener imagines, the botanical authority simply means that in all *likely* locations throughout those mountains, one may be fairly certain of finding that plant. Any one cliff may not support more than half a dozen individuals.

Rock gardens have been developed very successfully in Colorado. This example is at Colorado Springs.

The Question of Drainage

DRAINAGE has probably received more space in garden books than any other single problem, but from the recorded results, it has apparently received less thought. The most common expression concerning drainage is "that alpines require good drainage." So they do, but very few writers have ever paused to explain what good drainage really is, and the lay gardener has unfortunately jumped to the conclusion that drainage is simply another way of saying dryness.

Drainage most decidedly is not dryness. An enormous number of rare and expensive alpines have been killed, just because they have been grown too dry. A light, sandy soil, or the top of a sunny slope is taken to mean a happy home for the alpine that is said to demand "perfect drainage." In such a parched location it is small wonder that the death of the alpine is only a question of time. It not only requires perfect drainage, but moisture as well. As an example, con-

sider one of New England's choicest alpines—*Saxifraga aizoides*, a lovely little plant with bright yellow, starry flowers flecked with crimson. This may occasionally be found in the Green Mountains, and more easily in the Shickshock Mountains of Canada. Invariably it grows on dripping wet cliffs. I have found it on serpentine shelves enveloped by a continual mist from a near-by waterfall. The entire plant—roots, leaves and flowers—was dripping wet. Yet this plant has perfect drainage, a fact that most persons cannot understand.

In order to explain drainage, one must first of all understand that drainage is not dryness, and that perfect drainage may be present under conditions of absolute saturation.

Very simply, drainage involves the movement of water and not the absence of it. Plant roots must have air, or rather the oxygen contained in the air. Moving water always carries air in solution from which plant roots may derive the necessary oxygen. When drainage fails, and the water ceases to move, the air soon comes out of solution, or is exhausted by the near-by plants, and as a result the plants soon perish. In other words, their death may be attributed to poor drainage.

Poor drainage always obtains whenever the soil water ceases to move. This condition may be brought about in two ways:

1. The plugging of the passages between the tiny particles of soil, or, as in clay, by the very minuteness of these passages themselves.
2. Whenever the soil is below the general water level of the ground.

The first case is common in heavy soils, that is, those which contain a high percentage of clay. Here the soil particles are so close together, and the corresponding passages between them so small, that water cannot move through them fast enough to prevent its becoming stagnant.

In the second instance, the surrounding water drains into the low spot, from which the collected water cannot move.

The cures are obvious. In the first instance, anything that will lighten the soil will aid drainage. Sand, gravel, peat, ashes, will all loosen the soil and provide drainage spaces for the soil water. In the second instance, one should avoid "pockets" into which the rest of the rockery will drain. These danger spots will always make themselves known during a rain. They are the spots where water collects and remains. The above remarks apply to sub-surface drainage. Drainage of the surface is equally as important and for the same reason. Water standing over the foliage of a plant will shut off the life-giving oxygen.

Ice forming in such spots during the Winter spells certain death to the plants. Among its evil effects is that of rot, which is very easily induced in plants with heavy foliage masses which are allowed to become flooded and ice-bound during the Winter.

Surface drainage, which simply involves keeping the water on the surface of the soil in motion, may always be insured by sloping the soil. Even on level rockeries, surface drainage may be taken care of by elevating the level of the bed an inch or more above the level of the surrounding ground.

Feeding of Alpines

ANOTHER fond belief that needs some real "debunking" is concerned with the problem of the feeding of alpines. It is popularly believed that alpines thrive on a starvation diet. This is undoubtedly based upon the fact that the soil in alpine regions is very shallow, very stony and very "poor" looking. As a matter of fact, there is less plant food per square yard than there is in bottom land along a river, but on the other hand, there are far fewer plants in the same area. All in all, there is about the same relation between the number of plants and the amount of food in any region. The more plants there are, the more humus there is added to the soil each year, and, consequently, when this humus breaks down, the more mineral salts. On any given site, barring the possible removal of the plants or portions of them, all that is drawn from the soil is eventually returned to it, and in addition there is a small, but appreciable amount of nitrogen added each year, especially if any leguminous plants are present. So, assuming that no part of any plant is taken away, but that all parts are eventually returned to the soil to rot, it is seen that the soil never becomes any poorer. It is a continuous cycle, just as true of the alpine regions as of the bottom lands.

In the garden this cycle is interrupted by the removal by the gardener of parts of the plant, perhaps as cut flowers, perhaps as portions of the plant for a gift, or by the periodical lifting, dividing and resetting. Every time he lifts a plant—weed or otherwise—and throws it away, he is throwing away some of the fertility of the soil, which must be replaced in the form of fertilizers. Now, without taking up the theory of fertilization, it is sufficient to say that the amount of fertilizer to be applied per square yard depends upon the character of the crop. Obviously, heavy feeders, with coarse, massive foliage, require more food than do small plants with but a fraction of that foliage volume to sustain and build.

—Photo by Scherver

A rock garden at the home of Mrs. Theodore Burgess in Dedham, Mass.

On this basis, ten alpines per square yard need far less fertilizer than do ten plants of *Phlox paniculata* growing in the same area. But they do need some, and they need that every year.

Tiny plants, such as drabas, saxifragas, houstonias, and all the little things with small leaves, tiny rosettes and thread-like stems require very little fertilizer. Probably a top dressing of compost is all that is required. Heavier plants, such as pentstemons, senecios and gentians, require a correspondingly heavier amount of fertilizer. Plants from alpine meadows will stand heavier feeding than plants from the snow line and the cliffs.

In general, feed your alpines just as you would any other type of plant, simply tempering your generosity with common sense and realizing that small plants do not require as much as large plants.

Chicopee, Mass. —James H. Bissland.

READERS' LETTERS TO THE EDITOR

Successful Chinese Elm Hedge

DEAR EDITOR: There has been a discussion about hedges of Chinese elm, *Ulmus pumila*, in some of the late issues of *Horticulture*, but, apparently, those who know have not come forward to tell where the bushes may be obtained. In the Spring of 1937, I planted about 100 feet of rather closely spaced bushes (one to the foot) which were 24 inches to 30 inches high. A few of them did not grow and were at once replaced by the nursery.

Last year they devoted their efforts to getting established, but this year they have started to grow and give promise of doing a fine job. The only catalogue in which I have seen them listed has them in heights from 12 inches to 18 inches to 3 feet to 4 feet and they are moderately priced.

This appears to me to be developing into one of the most satisfactory of hedge plants for it can be pruned to any hedge height and will stand exposure to every weather condition.

—H. W. Geromanos.

Chestnut Hill, Mass.

Chalk to Stimulate Daphne

DEAR EDITOR—In the issue of *Horticulture* of May 15 is a plea for help from one who has difficulty with *Daphne cneorum*. I lost several plants and had almost decided that for me they were impossible, but fortunately I read somewhere that these lovely little plants grow on the chalk cliffs of England. I have, therefore, been giving them some chalk three or four times a year. I buy just the common white crayon that is used in the schools, break it into pieces or pound it into smaller bits, and give each plant as much as three or four sticks. The plants have responded to the treatment and bloom well. I shall be pleased if some other gardener gets benefit from my experience.

—Adelaide McCune.

Jacksonville, Ill.

Beware of Selinum Tenuifolium

DEAR EDITOR—If the plant pictured on the cover of *Horticulture*, issue of June 1, *Selinum tenuifolium*, is taken into your garden, be very careful that it is never allowed to set seeds, for it will scatter them everywhere, and become an unmitigated nuisance. Although the plant is rather handsome, it has a weedy look, and an odor that is not altogether pleasing.

—Rebecca Parker.

Salem, Ind.

Protection for Daphne Cneorum

DEAR EDITOR—I am interested in your answer to "Trouble with *Daphne cneorum*" in *Horticulture* of May 15. I have a fine planting of *D. cneorum* about my bird bath and this Spring it was especially lovely. It may be that the way I treat mine will be of help to someone else. We have a northern exposure and our soil is a clay loam. Often my husband says that the only garden tools we really need are a pick and a shovel and a crowbar. So I mixed some sand with my clay loam to lighten it and added a little lime, for the daphne does not like an acid soil.

Because of the northern exposure, I wrap the plants each Winter with tea-matting, taking about three pieces and putting them together so as to form a blanket around the entire bed, with handles to prevent its falling down onto the daphne. It comes out well each Spring—a great mass of bloom. Several of my friends complain that their plants winterkill, but they do not protect them in any way.

—Dorothy V. Brodie.

Binghamton, N. Y.

Success With Iris Tectorum

DEAR EDITOR—I am much interested in the article in *Horticulture* of February 1, concerning *Iris tectorum*. I have never grown the type, but *I. tectorum alba* seems easy here, and one would assume that the type would be at least no more of a problem.

In August, 1935, I was given a clump of "alba." I was suspicious of it, and divided it into four small pieces which I planted in four different situations. During the following year I paid no attention to these clumps; in fact, I forgot them.

Then last Spring I unexpectedly saw a sparkle of icy whiteness, and there was *I. tectorum alba* all abloom! The small division had increased four-fold, and was blooming well. And what bloom! And planted in very heavy soil, although well-drained, in full sun, and thoroughly dry most of the growing season!

Here at least, then, from Summer baking, one gets exquisite bloom from what Dykes calls "one of the most beautiful of all irises."

—E. S. Foote.

West Hartford, Conn.

A Correction From Colorado

DEAR EDITOR: We are glad to know of your interest in our garden center. No street number has been given us so far, but the center is at the intersection of two main highways. The address would be Denver Garden Center, West Alameda Avenue and Santa Fe Drive.

Mrs. A. G. Fish, regional vice-president of the Rocky Mountain Region, has called a meeting to be held at Colorado Springs the day before the convention.

Your statement in *Horticulture* for June 1 seems to indicate that Mrs. Fish is hostess of the convention. Colorado as a state is really the hostess.

—Mrs. Clarence M. Richards, President.

Wheat Ridge, Colo.

Lupin Seeds Germinate Quickly

DEAR EDITOR: I wonder if anyone has had such an experience in germination as I have. I nicked 100 Russell lupin seeds, and planted them in sand on a Sunday morning and 24 hours later one had sprouted and broken ground. Thirty-six hours later another had done so, while by Thursday a great many of them had broken ground.

Twenty-four hours to form a radicle and lift cotyledons is by far the quickest action I have ever known. The seeds were set on a bench in an unheated greenhouse, so about eight hours sun warming is all they had, with no soaking.

—H. U. Holzer.

Boston, Mass.

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EDWARD I. FARRINGTON, *Editor*

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As to the Upsetting of Nature's Balance

WHEN the remarks of Professor Merritt E. Fernald condemning the work being done by the CCC were first called to my attention, they seemed to me too preposterous to be harmful. When, however, *Horticulture* (issue of June 15) quotes these remarks with some degree of agreement, I feel that a denial is in order.

Professor Fernald makes it appear that until the advent of the CCC that "delicate thing: the balance of Nature" was never in danger of being upset. Yet, ever since industry and commerce led this country on its merry chase to "prosperity," private interests have been upsetting Nature's balance in the most ruthless and selfish manner on an unprecedented scale, and almost entirely unmolested, except for the faint voices of protest of the few who saw the handwriting on the wall.

Private corporations holding counsel within the stone canyons of our great cities caused whole mountain sides to be denuded for material profits and with utter disregard for the fatal results to large populations in the form of disastrous floods and irreparable loss of fertile soil.

Industry has turned our beautiful streams and rivers into open sewers, killing fish and game in an outrageous ratio. Professor Fernald worries about the "new ponds" built by the CCC, but there is hardly a pond site in New England which is not, or was not at some time, turned by means of a dam into a mill pond to furnish water power. One wonders if there has been another factor more conducive to the upsetting of Nature's balance than the world-record-breaking forest fires in America. Yet the professor objects to the roads being built by the CCC in order that these fires may be lessened, and fought with greater efficiency when they do occur.

No, the cause of Nature's upset balance lies deeper. Real conservation is nothing more or less than permitting all forces and functions of Nature to function without any human interference. In that huge scheme known as the hydrological cycle every piece of land—by its topography, its cover, the water-course on, or the water-table beneath, its surface, or by the nature of its soil—performs a definite and important function in the working of this cycle; just as each part of the human body, or the man-made machine, functions and is essential to the perfect performance of that body or engine. Yet, all through the history of this rich continent, land has been tossed around, as it were, without any restriction as to its use or abuse, and with little if any consideration as to the function it performs in Nature's scheme as ordained by the laws of the universe.

In no other country is man allowed to violate these laws of the universe as in this country of ours, reputed to be groaning under a burden of "man-made" laws. This legalized disregard of the laws of the universe—and nothing else—has been, and still is the fundamental cause of the "upsetting of the balance of Nature."

At last—and for the first time in the history of these United States—a peace army of young men is called forth to promote the cause of conservation. They have planted millions of trees on the slopes denuded by uncontrolled timber cutting and continuous forest fires. They are trying to stop appalling loss of soil by many and varied erosion control projects.

In order to avoid the very thing for which Professor Fernald condemns the CCC, the entire work program is initiated by the State Department of Conservation, or like agencies, but subject to final approval by the United States Forest Service and the National Park Service, the function of the Army being that of housing, feeding and clothing the boys.

It is very evident that a condemnation of CCC work is a condemnation of the nation's official conservation policy. To one who knows this policy, knows how it is applied, and who is also acquainted with results already obtained, such a condemnation is unfounded and unwarranted. Of course, mistakes were made, especially in the beginning, but whatever "upsetting of Nature's balance" they caused was exceedingly slight in comparison with the damage done during years of uncontrolled land-use—and especially in comparison with the degree to which the "balance of Nature" is gradually being restored by the activities of the CCC.

—Egbert Hans.

Billerica, Mass.

Pleasing New Deutzias Are Tested

A RECENT scanning of six representative nursery catalogues made evident that there were presented just six deutzias, and two of these were in only one catalogue. Thus, of these useful shrubs that follow the early spiræas those generally available were the excellent *Deutzia gracilis*, the pleasing *D. lemoinei*, and the two taller later sorts, *D. scabra* and Pride of Rochester.

Now these are all good sorts, but not nearly so completely useful that newer garden sorts should be neglected. The great hybridist Lemoine kept right on with his inspirational work at Nancy after he started out with *D. lemoinei*, and his son also "carried on." New lilacs, philadelphuses, spiræas and deutzias resulted, as well as many herbaceous plants. But the cold and clammy hand of Quarantine 37 checked further importations, for the government saw tigers and pythons in anything originating across the great water! As the rigors of this ineffective quarantine are subsiding, American plant lovers are beginning to get the good things which have been shut out.

That splendid park plantsman who left us a heritage of American varieties of lilacs, John Dunbar of Rochester's Highland Park, got an importation of shrubs through under the quarantine wire just as it was being stretched. He had a great importation from Lemoine, and he shared the results with his friends. On November 15, 1919, "Breeze Hill" gardens received from Mr. Dunbar cuttings of 17 deutzia varieties. These were rooted, planted and carefully considered. A full dozen of them are cherished as really valuable garden adjuncts. It seems now worth while to mention here several of them, quite distinct from the narrow nursery limitations as above referred to.

One great but graceful shrub succeeding *Spiræa vanhouttei* in bloom time is *Deutzia candida*, with its inch-wide white blooms made up of petals curiously turned inward. Standing shade considerably, this sort is stately and yet as smooth in outline as any spiræa. A form of *D. lemoinei compacta* called Boule de Neige has large white flowers in abundant clusters that justify the translation of its name. Another excellent white-blooming variety is *D. rosea campanulata*, and it has distinction both in bloom and habit, being midway between the dwarf and the tall sorts.

But to me the pink-flowering deutzias are delightful, because the coloring is pure and clean, free from the more or less sour magenta hues of many pink-flowering items. *D. elegantissima* is well named, for it is surely elegant in its rounded and graceful form as well as in its dainty but definitely pink

coloration, peculiar in its faint striping and all-over beauty. *D. carnea* is another pink variety of different habit and less acute coloring. *D. rosea eximia* provides another agreeable pink-blooming deutzia of high quality.

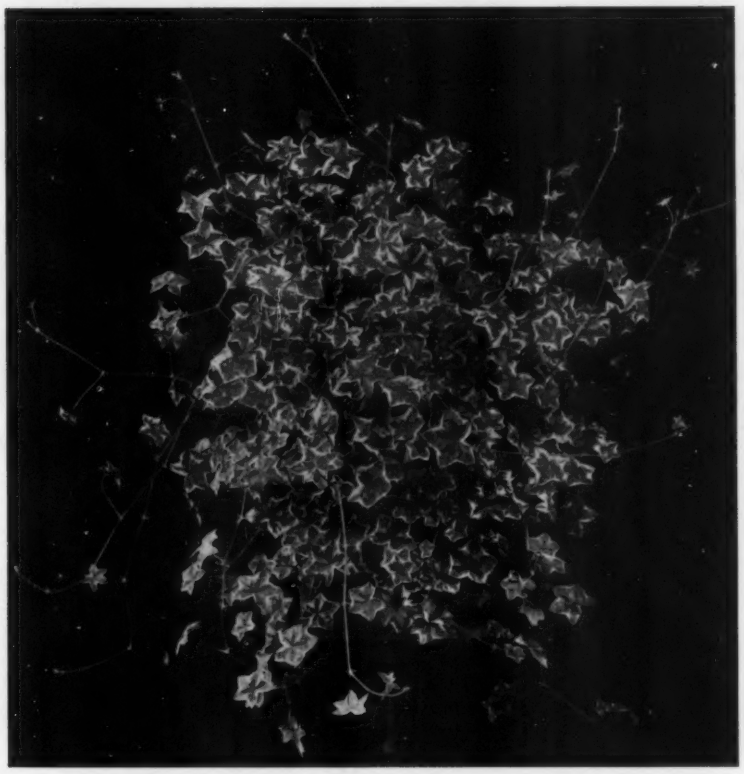
Now all of these deutzias have considerable shade endurance, abundant vigor, and have been hardy at "Breeze Hill" over a long term of hard Winters, to say nothing about the past Winter which was no Winter.

I am a little bit ashamed to mention these fine things which ought to be well known, because I do not know where inquirers may get the plants. I have at all times been willing to provide a reasonable quantity of propagating material, and that willingness still continues.

One variety not mentioned so far is Mont Rose, also a Lemoine sort, which came to "Breeze Hill" in 1926. It has bloomed later than any other variety this year, just following the lovely pink *D. rosea campanulata.* Its richly beautiful sunrise-pink flowers are an inch across and are individually lovely, while the plant itself, symmetrical and not too husky and upstanding, has the quality of elegance one wants in garden and border plants. Like other deutzias it has a considerable measure of shade endurance, and it seems to me truly a garden prize.

—J. Horace McFarland.

Harrisburg, Pa.



The Sunset ivy geranium has greenish gray and white leaves which are flushed with pink.

The Fragrant Sweet Rocket

HOW true it is that one seldom fully appreciates one's most precious companions until they are gone. They are often taken for granted, their closeness dimming their true worth. That represents my own attitude, at least, toward the double sweet rocket, a plant that had been in the family for perhaps 150 years and is now lost, with little likelihood of soon recovering its fragrance and charm. I never realized until it was too late just how rare the plant is in this country, thinking, I suppose, that anything of such engaging personality would be held dear by all lovers of oldtime plants.

All of which is by way of introducing to modern gardeners one of the sweetest of the associates of the ancients. Even though it may take years of searching to find either the white or the purple double forms and perhaps never the ruby-flowered one mentioned by the ancients, the wait will only serve to make the final accomplishment a real event, bringing with it fully double flowers on 15-inch stems which are somewhat suggestive of double stocks and have an evening fragrance comparable to nothing else on earth.

While searching for these treasures, do not overlook the single-flowered forms. These, formerly found in every garden, but now alas! much neglected, are plants of numberless uses, their adaptive habits making it possible for them to assume almost any role assigned them. One of the most felicitous associations that comes to mind in this connection is the scene in a neighbor's garden, where he has scattered seeds of his hesperis in a small, open woodland, creating a charming, long-time, summer picture.

A doleful relative of the sweet rocket is the plant which we oldsters know as *Matthiola bicornis* or, in ordinary parlance, night-scented stock. That they now call it *Hesperis tristis* brings it closer into the compass of these notes, but does not add to its value. Its worth might be and is variously measured, its poor, weedy nature earning for it the condemnation of most gardeners. It got that appraisal from me, too, until I read a few years ago that its ugliness could be masked by planting it among Virginia stock, the foot-high growths of the latter covering the six-inch straggling plants and poor purplish stars of the other, yet enabling one to enjoy the heavenly fragrance of those despised blossoms. Both being annuals, or at least accommodating themselves to such treatment, makes it possible to handle them in this manner.

—C. W. Wood.

Copemish, Mich.

The "Sunset" Ivy Geranium

NO OTHER name than the one above has, as yet, been found for this geranium, which is found in many Maine window gardens. The plant illustrated is about 25 years old, and each Fall the owner repots it, discarding weakened portions and replanting in good garden soil, first lining the pot with dried cow manure. A west window suits it best, and when grown on the dry side, the greenish gray and white leaves are beautifully flushed with pink. The flowers, scantily produced, are single white, veined with violet, and no seed is set. The owner propagates it by rooting cuttings in water. The large plant is kept in the house, or in a shady corner of the veranda in Summer, but the rooted cuttings are set in the ground, where they grow vigorously into fine plants for the Winter window garden.

—Bessie R. Buxton.

Peabody, Mass.

Preparedness in Ground Covers

SINCE but few yards escape the need of ground cover plants, might it not be economical for each gardener who has not already taken care of his ground cover needs to buy a collection of these plants, as many of each as the garden allowance will permit—say from three to 100?

For shade this should include pachysandra, *Asperula odorata,* ajuga, *Sedum ternatum, Vinca minor* (Bowles var.), *Euonymus radicans coloratus, Hedera helix baltica, Ranunculus repens, Veronica filiformis, Euonymus obovatus.*

For sunny places use ajuga, vinca, euonymus as mentioned above, *Thymus serpyllum coccineus, Dianthus deltoides, Phlox subulata litæni, Sedum album, S. spurium, S. acre, Veronica rupestris.*

These plants should be planted in good soil and divided early each Spring until the desired quantity is available for planting in the various spots requiring a ground cover.

—Victor H. Ries.

Columbus, Ohio.

RAMBLING OBSERVATIONS OF A ROVING GARDENER

AS A lover of roses I am well acquainted with the many fragrances possessed by the queen of flowers, and I know something of the way in which the perfume persists. I am leaving roses for the moment, however, and referring to something that happened with the blooms of one of the loveliest of all the philadelphuses, the Lemoine variety Belle Etoile. This is one of the mockoranges which, if smelled with the nose instead of with the eyes, will disclose the penetrating fragrance of the gardenia. I say this because most persons smell what they expect to smell, rather than the odor actually disengaged before their noses.

Two flowers from this scant-blooming philadelphus I left in a glass unnoticed. The third morning I lifted one bloom and found its fragrance unchanged, but its petals were just dropping. It was entirely through, but the fragrance carried along, and that causes an inquiry which I hope will be answered.

As I write I am looking at another of these fragrant philadelphuses which does not smell like a mockorange. It is *Philadelphus purpurascens*, the blooms of which are not large, the name coming from a purplish spot at the base of the sepal. This lovely thing has precisely the fragrance of the sweet pea, as I have proved to many visitors who smell with their eyes first, by bringing sweet peas to the comparison. Although I have had the plant since it came from the Arnold Arboretum in 1913, I do not know of any stock of it anywhere, but I do know that it is always a joy to me as one of the late pleasures in the long season of philadelphus.

Someone will promptly tell me, I think, that the so called "sweet shrub," *Calycanthus floridus*, keeps its odor a long time and that the odor improves as the flowers get warm. It would be rather pleasing, it seems to me, if other correspondents advanced the scope of information on this "fragrant" subject. To me the philadelphus group has very great value for its fragrance, in addition to the lovely flowers which give us more than a month of mockoranges.

IT SEEMS to me that our horticultural experts are taking strange liberties with Nature. We have been taught that we can grow plants without soil and now we are told that we can get fruit from flowers which have never been pollenized. It seems that two biologists working at the U. S. Department of Agriculture's Experiment Station at Beltsville, Md., have developed a system to which they have naturally given an awe-inspiring name—parthenocarpy, in fact. The word has meaning, of course, to those familiar with root words. It signifies virgin fruit and is applied because of the fact that natural pollen is entirely dispensed with.

The plan followed is to spray the blossoms with one of the new growth-promoting substances being used in the development of plant cuttings. Reports are that flowers which have been sprayed with this chemical develop normal fruit, going through the ordinary routine from the swelling of the ovary to the coloring of the berry in the Autumn. The fruit looks like any other but contains not a trace of an embryo. Oh, biology, what things are done in thy name!

I AM interested to find that The Pennsylvania Horticultural Society is searching out small gardens of unusual interest and charm when making its annual awards. There is always a tendency to concentrate on ambitious and pretentious gardens such as those to be found on large estates, but a horticultural society is doing a real service when it helps its members in the development of gardens which have genuine merit although limited in size.

The illustration on this page shows the garden of Mr. and Mrs. Wilson S. Yerger of Chestnut Hill, Philadelphia, Pa., which has been given a certificate of merit by the Pennsylvania society. The citation which went with this award reads as follows: "A perfect example of what can be done in the small yard by enthusiasm, good taste and loving care. All these qualities, which are essential to the making of an attractive garden, are here exhibited."

WHEN motoring through Pennsylvania last Autumn, I discovered another town with flower boxes on the street lamps up and down its business street. That was Bloomsburg. I had thought that Camden, Maine, was the only town with this distinction, but I am told that some citizens of Bloomsburg contributed funds for these boxes and their upkeep. When I saw them, red geraniums and candytuft were in bloom and vines of vinca were trailing over the edges of the boxes.

Mr. and Mrs. Wilson S. Yerger of Chestnut Hill, Pa., have been given a certificate of merit by the Pennsylvania Horticultural Society for this interesting small garden.

Food and Drink for Trees

Ornamental trees cannot be expected to thrive unless they are given a reasonable amount of care and attention

TREES must be fed if they are to thrive. This applies to ornamental trees as well as to fruit trees, although the feeding formula may be somewhat different. The fact that fruit trees must be fertilized has always been recognized but the necessity of feeding ornamentals has been given less thought. Probably it would have continued to receive little attention if tree experts who have given years of study to the subject had not emphasized the fact that thin, scattered foliage, undersized leaves, poor color, presence of dead branches, small annual growth and the presence of insect pests and fungus diseases in unusual numbers can often be traced to lack of nourishment.

If a tree is to be kept healthy and vigorous, it must be well fed and it must receive plenty of water. These two things are essential. Fertilizers provide the elements which the trees need for continued growth and the water is required to make the fertilizers available. This treatment is even more necessary at the present time than in years gone by, because many new pests have become established and in order to resist their depredations, the trees must have ample stamina. It is the undernourished tree that is most likely to fall prey to insect pests and fungus diseases.

Dr. E. P. Felt, a well known authority, has written:

A tree dying of so-called old age is more frequently starved than otherwise. A Norway spruce is believed by many to be shortlived in this country as indicated in dying tops in trees thirty to fifty years old. The fact is that the Norway spruce is a gross feeder and dying tops often indicate lack of nourishment rather than old-age decrepitude.

Good Feeding Methods

THERE is almost no time of the year when fertilizers cannot be given to growing trees except when the ground is frozen. Work can be done this season as well as at any other time. It is not difficult to determine the amount of fertilizer required. One need only keep this rule in mind—one pound of a complete plant food should be allowed for each inch of the trunk's circumference four feet above the ground. The method of applying fertilizer is not quite so simple. If the material is spread on the ground, especially on grassland, the sod will be heavily fed and comparatively little of the plant food will reach the roots of the trees. It is seldom that the ground under ornamental trees is cultivated. If that happens to be the case, the fertilizer may be dug deeply into the soil in a circle coincident with the droop of the branches. It is important to remember that the feeding roots of trees are to be found, for the most part, under the point at which the spread of the branches ends. As this spread increases, the area to be fertilized must be enlarged.

Assuming that the ground under the tree or trees to be treated is sod land, the punch bar method becomes most satisfactory for the home grounds. At a recent conference, Professor Alex Laurie of the Ohio State University, suggested the use of ten holes for each inch in the tree's diameter. Please note that in this case the diameter and not the circumference of the tree is the unit of measurement. He said that the holes should be about eight inches deep and recommended a fertilizer rather high in nitrogen. He thought that an application of such a fertilizer should approximate five pounds for each inch of the tree's diameter. Here, again, he is using the diameter of the tree and not the circumference in making his recommendations. This advice was for trees over five inches in diameter. Trees smaller than five inches should have the application reduced about one-half.

The holes can be made readily with an auger or a pointed stick and a mallet, but a ground auger is best. The holes should be made in a zigzag manner rather than in a perfect circle with a range of two or three feet between the inside and the outside. The holes should be half filled with the plant food, after which they should be filled to the top with good soil. A somewhat different plan is followed by many commercial tree experts, who use a pressure gun for forcing the fertilizer to the roots.

Much Water Needed

THE use of water is recognized, of course, but it is seldom that garden makers realize that the normal transpiration on a warm day is very great. The fact has been stated, and doubtless is true, that a tree with a spread of 50 feet under normal conditions may throw off three barrels of water a day. A heavy watering in cultivated land is almost certain to reach the roots but may not do so readily in sod land. It is well, therefore, to make holes eight inches deep in the sod under the tree spread. These holes can be made with a spading fork. Steady watering for several hours once every two weeks will be required to supply sufficient moisture if the rainfall has been light.

A more effective plan and a quicker one is to use a water lance. This is a device which can be attached to the hose and which has a handle at the top. The lance may be thrust into the ground at any desired depth and will convey water directly to the roots. The water lance is easy to use and a considerable area can be covered in half the time required by any other method. Incidentally, this water lance is useful for applying water to the roots of roses and shrubs.

Trees need air as well as food and water. This is true of the trunk and branches as well as it is of the roots and foliage. Heavy oil sprays or sticky paints are likely to do much harm if they cover too much area. Sugar maples have been killed by paints of sticky material more than twelve inches in diameter put on to catch insects. Sometimes grading operations require additional filling above the roots of the tree. If this filling consists of coarse gravel, no harm is likely to be done, but if it consists of clay, the trees may suffer severely. Indeed, trees often have been killed by this mistake. It is very necessary to know the nature of the soil. Of course, injury from escaping gas is a very serious problem, but one which must be taken up with local officials.

Pests and Lightning

WHEN a tree loses its leaves, it is in much the same position as a human being with damaged lungs. Repeated denudings will kill even a tough deciduous tree, and if an evergreen tree is defoliated once, it probably will die. It is obvious, therefore, that attention must be paid to the control of insect pests, especially those which work rapidly and persist for a long time. Just what to use for sprays and when to use them is, however, a matter about which even tree experts have differences of opinion. It is wise to get immediate assistance when a bad situation is encountered. This holds as true when tree diseases must be dealt with as when insect pests become rampant.

Protection even from lightning is now possible. Dr. Felt, already quoted, says, "The electric storm, frightful in its severity, may be tamed by the installation of lightning rods. Science has shown that with a proper installation, it is most exceptional for a tree to be damaged by lightning, simply because the cable provides a more acceptable passage for the bolt. Such precautions can hardly be recommended too highly for the more valuable trees on lawns and in parks."

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Controlling Hollyhock Rust

HOLLYHOCK rust is one of the most widely distributed and most damaging diseases of the flower garden in many places. It is likely to be present wherever hollyhocks are grown.

It is caused by one of the true rust fungi, *Puccinia malvacearum*, which is able to attack only the hollyhock and other plants in the mallow family. The common mallow weed, *Malva rotundifolia*, like the hollyhock, is very susceptible to rust and for that reason should not be allowed to grow near the garden.

The fungus of hollyhock rust spends the Winter in the dead leaves and other plant parts left in or near the garden. When growth starts in the Spring, rust spores attack the tender shoots while they are growing through the soil, resulting in leaf and stem spots shortly after the first leaves are expanded. Or, the first infection may not occur until after the plants are several inches high. When the newly formed spores on the green leaves are matured, they are spread to other parts of the growing plant by wind, rain, and insects, where new infections take place during damp nights or rainy days. One infection after another may occur throughout the season resulting in heavily diseased, stunted and unsightly plants. The remedies are as follows:

In the Spring just before the new shoots emerge, clear away any protective covering, and gather and burn the old hollyhock refuse that was not destroyed the preceding Fall. Apply a sulphur dust or sulphur spray once a week from the time the plants come up until the first blossoms open, taking care to cover both sides of the leaves. Examine regularly the lower leaves and remove the heavily spotted ones. Destroy nearby mallow weeds. After the blooming period is over, cut the stalks near the ground and place them on the refuse pile and burn them. Dust or spray the new leaves that grow from the crown often enough to keep them coated with sulphur. In the Fall, remove and burn all hollyhock plant refuse in order to prevent over-wintering of the rust fungus in the garden.

Delphinium Leaf Spot

BACTERIAL leaf spot is a cool, wet weather disease that causes considerable damage to larkspur, particularly in the Spring and early Summer. It forms black, tar-like spots scattered over the surface of the leaf. The spots vary in size from a pinhead to one-fourth inch across, and usually are irregular in shape and outline. The disease also attacks the young flower stalk causing a spotting of the buds and stunting and sometimes a distortion of the entire flowering spike.

Leaf spot of delphiniums is caused by a bacterium that spends the Winter months in the plant refuse in and on the surface of the soil. In the Spring, it attacks the young plants causing the characteristic black spots.

Clear away and burn all plant refuse in the Spring before the new shoots emerge. Spray the surface of the soil around the crowns with Bordeaux mixture. Then spray the plants with the same material, beginning as soon as they appear through the soil and continuing at weekly intervals until blossoming. Dusting or spraying with sulphur may be practiced, but it is not so effective as spraying with Bordeaux. In the Fall, cut and burn the diseased plants in order to eliminate the source of infection for the next year's garden.

Injury from the cyclamen mite is sometimes confused with the bacterial disease. This pest causes a wrinkling, folding, and distortion of the leaves without the black spots characteristic of the bacterial disease. It also curls and stunts the flowering spike, and the flower buds may fail to open. Affected leaves should be removed and destroyed, and the entire plant sprayed with a Summer oil. Or, the oil may be added at the prescribed strength to the Bordeaux spray instead of to water. Nicotine sulphate added to the oil spray will increase its effectiveness against the pest.

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Tested Remedy for Rose Bugs

HAVING had many complaints of rose bugs and noting that *Horticulture* suggests no remedy, I venture to suggest an absolute cure for the pests. Finely ground copperas (sulphate of iron), one tablespoonful to the plant, worked around it (but not over the crown) will rid any garden of these pests. I have nearly a thousand peonies and this year have found only four rose bugs while a neighbor's garden only a few hundred feet distant is infested to such an extent that there is not a perfect light-colored flower. We discussed this remedy at Bristol, where it was suggested that the chemical might act also as a repellent. A woman who recently returned from England said that there were no rose bugs there, due to the steady use of copperas in that country.

Another circumstance may be of interest. My sister's place at St. Davids, Pa., is next to a golf club, reputed to be the worst afflicted area for Japanese beetle. The blooms of a large *Magnolia macrophylla* were annually destroyed by rose bugs. One year we took branches into the house and within an hour the window screens were darkened with a solid mass of creeping creatures. One could hear them crawling over each other. Then the lawns were liberally treated with arsenate for the beetles, which seemingly served the double purpose of eliminating the rose bugs, too. Consequently, copperas has not been tried there, but it was used successfully in Stamford, at Nepang and various other places known to us. I am sure of its value here.

—Emilie Benson Knipe.

New Hartford, Conn.

A Lilac Grown From Seed

SOMETIME during the Fall of 1934 I obtained seeds of the lilac *Syringa microphylla.* They were kept in damp peat moss out of doors until February 8, 1935, when they were planted in a large, deep flat of garden soil mixed with a little sand. In April they germinated very well and after thinning out some of them, I had 35 plants left. They were kept in the flat all Summer, grew rapidly and were transplanted into the garden in October. Some of the plants bloomed in the Spring of 1937 and all of them are going to bloom this Spring. They were shortened back several times and are bushy plants about two and a half to three feet tall. The blooms are dainty and the color varies from deep lilac to light lilac and one is almost pink. It blooms slightly in advance of the common lilac and flowers less abundantly in August or September. The leaves are small and it is the daintiest lilac I have seen. When this double-duty lilac becomes well known, I am sure it will be in great demand.

S. microphylla finally grows into a shrub of rounded habit eight feet tall and twelve feet in diameter. The branches are twiggy and very numerous and every one terminates in a panicle of blossoms. The individual flowers are lavender on the outside and almost white inside, and they are delightfully fragrant. It has the same cultural requirements as the common lilac, which loves sunshine, good root drainage and a rich, loamy soil, and if lime is given, it is better. It is also very hardy and I believe it would make a good hedge.

—Hazel Chester Van Eaton.

Salem, Ore.

A Lawn Maintenance Program

I READ, with much interest, Mr. Sweetser's article in the June 1 issue of *Horticulture* on the Summer care of lawns. We have always used a grass catcher, and have kept the lawn cut regularly during the Summer months.

Our grass has been cut high from the beginning. In addition to setting the mower blade as high as possible, two pieces of rubber hose are tacked around the wooden roller and they raise the blade nearly another inch. This leaves the grass about

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two inches long after cutting, but this is not long enough to cause an excessive evaporation of water through the blades. This practice of cutting high gives a good protection to roots during Summer months, without the danger arising from leaving the grass clippings on the lawn. Usually, before the hot weather of July and August, we give the lawn another feeding of a good commercial fertilizer, mixed with bone meal, watering thoroughly as it is put on.

In our locality we have to water lawns very often during the Summer months, as the rains are uncertain. We have followed the above practice for several years, and it brings the lawn through the average Summer in very good condition. In the early Fall another feeding is applied. This gives the lawn strong growth and enables it to go through the Winter in good condition.

Aurora, Ill. —E. L. Cale.

Controlling Gladiolus Thrips

IT IS evident that the control of gladiolus thrips is far from being an accomplished fact. An uncomfortable number of thrips can be located in many plants this year. It is important, therefore, that control measures should be begun as soon as any evidence of the presence of the thrips appears. The first evidence is likely to be a silvering of the foliage. Probably the wise gladiolus grower will spray weekly regardless of the appearance of his plants, at least if there has been any evidence of thrips in the neighborhood. Not much is accomplished if spraying is delayed until the coming of flower spikes. Spraying is to be avoided when the flowers are open, as it injures them. Moreover, many adult thrips will secrete themselves in the heart of the open blooms.

Good results have been obtained with a tobacco preparation, especially if the pressure is strong. The lack of pressure in small spraying outfits is the reason for many failures, no doubt. A recommended formula is as follows:

Forty per cent nicotine sulphate	1 pint
Dissolved laundry soap	4 pounds
Water	100 gallons

The proportions may be too large for the average home garden maker. Reduced, they come out as follows:

Forty per cent nicotine sulphate	1 tablespoonful
Warm soap suds	1 quart.

If a small spray pump is used and the infestation is heavy, several applications at two-day intervals will be needed. It has been found fairly easy to control thrips in home gardens by using a spray program and by applying fertilizer and water in reasonable quantities. Poison sprays are frequently used by commercial growers but are not recommended for home gardens. Excellent results have been obtained by using pyrethrum and rotenone sprays at the strength recommended by the makers.

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